

07/ 890851

JC03 Rec'd PCT/PTL 06 AUG 2001

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner:

Group:

Attorney Docket # 1700

Applicant(s) : PAESSLER, W., ET AL

Serial No. :

Filed :

For : ELECTROMAGNETICALLY ACTUATABLE VALVE

SIMULTANEOUS AMENDMENT

August 6, 2001

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

S I R S:

Simultaneously with filing of the above identified application
please amend the same as follows:

In the Claims:

Cancel all claims without prejudice.

Substitute the claims attached hereto.

REMARKS:

This Amendment is submitted simultaneously with filing of the above identified
application.

With the present Amendment applicant has amended the claims so as to eliminate
their multiple dependency.

Consideration and allowance of the present application is most respectfully
requested.

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J009 Rec'd POT/PTO 06 AUG 2001

Respectfully submitted,



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FOI b7E b7D "T5806860

Claims

1. Electromagnetically actuatable valve (1) comprising a magnet part (2), a moveable armature element (7), a spring element (8), and a valve part (9),
5 whereby the magnet part has at least one magnetic coil (4) wound on a coil form (3), a flux concentrating element (5) and a center pole (6), and the valve part (9) has a closing element (11) that cooperates with the armature element (7) and controls the opening and closing of the valve on a valve seat (10), characterized in that the armature element (7) is designed as a clapper-type armature and
10 cooperates with the center pole (6) by way of a damping element (14).
2. Valve according to Claim 1, characterized in that the armature element (7) and the valve part (9) are contained in a housing.
- 15 3. Valve according to Claim 2, characterized in that the armature element (7), the flux concentrating element (5), the closing element (11), the spring element (8), and the damping element (14) are arranged in the housing in a pressure-sealed compartment.
- 20 4. Valve according to [one of the Claims 1 through 3] Claim 1, characterized in that the damping element (14) has a damping stop (13).
5. Valve according to [one of the Claims 1 through 4] Claim 1, characterized in that the flux concentrating element (5) is designed as a bracket which is
25 situated on the perimeter of the magnetic coil (4).
6. Valve according to [one of the Claims 1 through 5] Claim 1, characterized in that the closing element (11) actuated by the armature element (7) to open and close the valve (1) is an umbrella sealing plug with an umbrella membrane.

7. Valve according to Claim 6, characterized in that the umbrella sealing plug is flexible and, in particular, consists of silicone rubber.

8. Valve according to [one of the Claims 1 through 5] Claim 1, characterized in that the closing element (11) and the damping element (14) are designed as an integral damping shoe (15).

9. Valve according to Claim 8, characterized in that the damping shoe (15) is flexible and can be attached directly to the armature element (7) or it is injection moulded to it.

Claims

1. Electromagnetically actuatable valve (1) comprising a magnet part (2), a moveable armature element (7), a spring element (8), and a valve part (9),
5 whereby the magnet part has at least one magnetic coil (4) wound on a coil form (3), a flux concentrating element (5) and a center pole (6), and the valve part (9) has a closing element (11) that cooperates with the armature element (7) and controls the opening and closing of the valve on a valve seat (10), characterized in that the armature element (7) is designed as a clapper-type armature and
10 cooperates with the center pole (6) by way of a damping element (14).

2. Valve according to Claim 1, characterized in that the armature element (7) and the valve part (9) are contained in a housing.

15 3. Valve according to Claim 2, characterized in that the armature element (7), the flux concentrating element (5), the closing element (11), the spring element (8), and the damping element (14) are arranged in the housing in a pressure-sealed compartment.

20 4. Valve according to Claim 1, characterized in that the damping element (14) has a damping stop (13).

5. Valve according to Claim 1, characterized in that the flux concentrating element (5) is designed as a bracket which is situated on the perimeter of the
25 magnetic coil (4).

6. Valve according to Claim 1, characterized in that the closing element (11) actuated by the armature element (7) to open and close the valve (1) is an umbrella sealing plug with an umbrella membrane.

7. Valve according to Claim 6, characterized in that the umbrella sealing plug is flexible and, in particular, consists of silicone rubber.

8. Valve according to Claim 1, characterized in that the closing element (11)
5 and the damping element (14) are designed as an integral damping shoe (15).

9. Valve according to Claim 8, characterized in that the damping shoe (15) is flexible and can be attached directly to the armature element (7) or it is injection moulded to it.